

REMARKS/ARGUMENTS

Reconsideration and withdrawal of the rejections of the application are respectfully requested in view of the amendments and remarks herewith. The present amendment is being made to facilitate prosecution of the application.

I. STATUS OF THE CLAIMS AND FORMAL MATTERS

Claims 1, 2, 4-11, 29-38 and 55-58 are pending. Claims 1, 6, 29, 31, 35, 55 and 57 are independent and hereby amended. No new matter has been added. It is submitted that these claims, as originally presented, were in full compliance with the requirements of 35 U.S.C. §112. Changes to claims are not made for the purpose of patentability within the meaning of 35 U.S.C. §101, §102, §103, or §112. Rather, these changes are made simply for clarification and to round out the scope of protection to which Applicants are entitled.

II. SUPPORT FOR AMENDMENT IN SPECIFICATION

Support for this amendment is provided throughout the Specification as originally filed and specifically at paragraphs [0097]-[0098] of Applicants' corresponding published application. By way of example and not limitation:

[0097] FIG. 5 shows a configuration of the movement amount detection unit 31. A flesh-color area extraction unit 311 discriminates a pixel range capable of identifying flesh color in an RGB color space, a YIQ color space or an HSV color space. For example, in the RGB color space, threshold values showing a red signal range, a green signal range, and a blue signal range, which identify flesh color, are set to discriminate, for each pixel, whether the signal levels of three primary-colors signals generated based on the video signal 211 are within the area of flesh color or not, thereby extracting the pixel range (hereinafter, called a "flesh-color area") which can identify flesh color.

[0098] FIG. 6 shows an example of configuration of a movement vector calculation unit 312 of the movement amount detection unit 31. This movement

vector calculation unit 312 includes a blocking unit 3121 and a movement vector computation unit 3122, for example, as shown in FIG. 6. The movement vector calculation unit 312 **divides the extracted flesh-color area into blocks** to calculate a movement vector of the flesh-color area for each of the blocks. For example, the face unit and the hand unit of the audience is a block, respectively, and then, block matching of an image with the next frame (or the previous frame) image is performed for each of the blocks. The movement direction and the movement amount when the images of the blocks are most matched with each other are movement vector MV. Two-dimensional movement vector Mvi is detected, as shown in Formula (1).

III. RESPONSE TO REJECTIONS UNDER 35 U.S.C. §103(a)

Claims 1, 2, 4, 5, 29-34 and 55-58 were rejected under 35 U.S.C. §103(a) as allegedly unpatentable over U.S. Patent No. 5,550,928 to Lu (hereinafter, merely "Lu") in view of U.S. Patent No. 7,266,771 to Tow (hereinafter, merely "Tow") and further in view of U.S. Patent No. 5,907,361 to Okada (hereinafter, merely "Okada").

Claims 6-10 and 35-37 were rejected under 35 U.S.C. §103(a) as allegedly unpatentable over Lu in view of Tow in view of U.S. Patent No. 7,373,209 to Tagawa (hereinafter, merely "Tagawa") and further in view of Okada.

Claims 11 and 38 were rejected under 35 U.S.C. §103(a) as allegedly unpatentable over Lu in view of Tow in view of Tagawa in view of Okada and further in view of WO 91/03912 to Stevens (hereinafter, merely "Stevens").

Claim 1 recites, *inter alia*:

...wherein the movement amount detection device extracts a flesh-color area which identifies flesh color from said video signal, **divides extracted the flesh-color area into blocks identifying flesh color**, and calculates movement vectors for each of the divided blocks identifying flesh color,

wherein each pixel in the divided blocks identifies flesh color...
(Emphasis added)

As understood by Applicants, Okada relates to an image encoding and area extracting device which is capable of extracting a specified area and a motion area from an input image and performing controlled quantizing and encoding each of the extracted areas.

Applicants submit that neither Lu nor Tow nor Okada, taken alone or in combination, that would disclose or render predictable the above-identified features of claim 1. Specifically, none of the references used as a basis for rejection discloses or renders predictable "...the movement amount detection device... divides **extracted** the flesh-color area into blocks identifying flesh color... wherein **each pixel in the divided blocks identifies flesh color,**" as recited in claim 1.

Specifically, the Office Action (see page 4) concedes that Lu in view of Tow does not teach the movement amount detection device extracts a flesh-color area and divides the flesh-color area into blocks, but asserts that Okada teaches the above mentioned features, and refers to Okada, col.7 lines 16-40, col.7 lines 44-67, col.8 lines 15-27 and col.8 lines 33-55. Thus, Okada, col.7 lines 16-67, col.8 lines 15-55, Fig. 4 and Fig. 5 are reproduced as follow:

Okada, col.7 lines 16-67:

The specified area extracting portion 33 extracts a specified area which is a subject to be improved in its image quality. In case of application of the video encoding device for, e.g., videophones and videoconferencing, it may be generally understood that a face area of each image is most remarkable to recognize and, therefore, the image may be subjectively improved in its quality by extracting and improving the face area only. Accordingly, a method of extracting a face area regarded as a specified area will be described below:

FIG. 3 is a construction view of the specified are extracting portion 33 which is provided with an image contracting portion 36 connected to a frame memory 21 to reduce input image to a specified size, a colorimetric system converting portion 37 connected to the image contracting portion 36 to convert the colorimetric system of the image, **a specified color area extracting portion 38** connected to the colorimetric system converting portion 37 to extract pixels having a specified color, **a pixel counting portion 39** connected to the **specified color area extracting portion 38** to count specified color pixels per block and **a specified area block discriminating portion 40** connected to the pixel counting portion 39 to discriminate a unit significant block according to the results of counting pixels per block.

... ..

The colorimetric system converting portion 37 converts a contracted image of YCrCb colorimetric system to a contracted image of HSV colorimetric system. The HSV colorimetric system is known as so-called perceptive colorimetric system familiar to human perception. In comparison with the YCrCb colorimetric system wherein color components are correlated, the HSV colorimetric system has a low correlation between color components, which is therefore adapted for dividing an image into areas according to color components.

Okada, col.8 lines 15-55:

The specified color area extracting portion 38 extracts a face area from a contracted image of component H which in the HSV colorimetric system is most stable and least affected by shading and shadows. Pixels whose values $H_{i,j}$ satisfies the following condition are extracted from an image of component H.

... ..

The pixel counting portion 39 counts specified color pixels existing in each unit block of the face area determined by the specified color area extracting portion 38. A result of counts per unit block is entered into the specified area block discriminating portion 40.

The specified area block discriminating portion 40 discriminates significance of each unit block by comparing the result of counts obtained therein by the pixel counting portion 39 with a threshold for judgment. Any block is judged to be

significant or not significant if it contains more pixels or fewer pixels than the threshold value. A block map of 1 frame image is obtained and outputted. The threshold value for discriminating significant blocks is preset according to an encoding rate. When an encoding rate is low, it is desirable to increase the threshold value to get more effective unit blocks by eliminating blocks each containing a small number of pixels counted by the pixel counting portion 39. When an encoding rate is high, a smaller threshold is used to extract blocks having a less amount of pixels counted by the pixel counting portion 39. Thus, the threshold may vary in such a way that its value stepwise decreases as the encoding rate stepwise increases. **FIG. 5 shows a result of discriminating the face area shown in FIG. 4 according to a certain threshold value, wherein blocks containing a small number of pixels are removed from a face area and effective blocks are extracted as a specified area.** A map of thus obtained specified area blocks in a frame image is selected as a map of blocks of the specified area.

FIG.4

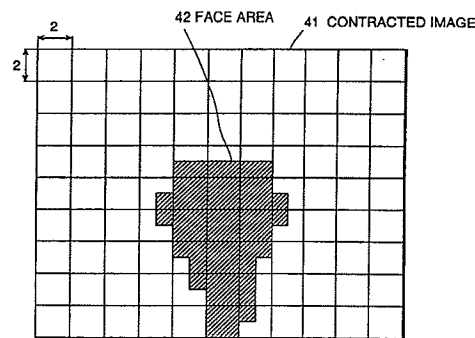
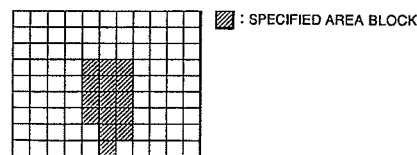


FIG.5



Thus, Applicants submit that Okada describes that after the specified color area extracting portion 38 extracts pixels having a specified color, the pixel counting portion 39 counts specified color pixels existing in each unit block of the face area, and then the specified

area block discriminating portion 40 discriminates significance of each unit block by comparing the result of counts obtained therein by the pixel counting portion 39 with a threshold for judgment, so that, as shown in Fig.4 and Fig.5, those blocks containing a small number of pixels are removed from a face area, and those blocks containing more pixels than the threshold value are judged to be the face area. In other words, in Okada, **those blocks containing more pixels than the threshold value are judged to be the face area, although in these blocks there are pixels not identifying the face color.** Thus, Okada does NOT disclose or render predictable “...each pixel in the divided blocks identifies flesh color,” as recited in claim 1.

Furthermore, this deficiency of Okada is not cured by the supplemental teaching of Lu or Tow or Tagawa.

Therefore, Applicants submit that independent claim 1 is patentable and respectfully request reconsideration and withdrawal of the rejection.

For reasons similar to, or somewhat similar to, those described above with regard to independent claim 1, independent claims 6, 29, 31, 35, 55 and 57 are also patentable, and Applicants thus respectfully request reconsideration of the rejections thereto.

IV. DEPENDENT CLAIMS

The other claims in this application are each dependent from one of the independent claims discussed above and are therefore believed patentable for at least the same reasons. Applicants thereby respectfully request reconsideration and withdrawal of rejections thereto. Because each dependent claim is also deemed to define an additional aspect of the

invention, however, the individual reconsideration of the patentability of each on its own merits is respectfully requested.

CONCLUSION

Because Applicants maintain that all claims are allowable for at least the reasons presented hereinabove, in the interests of brevity, this response does not comment on each and every comment made by the Examiner in the Office Action. This should not be taken as acquiescence of the substance of those comments, and Applicants reserve the right to address such comments.

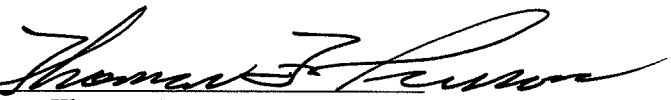
In the event the Examiner disagrees with any of statements appearing above with respect to the disclosure in the cited reference, or references, it is respectfully requested that the Examiner specifically indicate those portions of the reference, or references, providing the basis for a contrary view.

Please charge any additional fees that may be needed, and credit any overpayment, to our Deposit Account No. 50-0320.

In view of the foregoing amendments and remarks, it is believed that all of the claims in this application are patentable and Applicants respectfully request early passage to issue of the present application.

Respectfully submitted,

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